

DEC 09 2005

10/784,62701AB005-A/ALBRP234USAAMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions of claims in the application:

Listing of Claims:

1. (Currently amended) A touch screen system, comprising:
a substrate that has a surface;
a plurality of acoustic wave transducers located near a perimeter of the substrate surface comprising at least a first acoustic wave transducer that ~~is fixed to a perimeter of the substrate surface and transmits a first acoustic wave across the substrate surface~~ and at least second and third acoustic wave transducers that receive acoustic waves; and
a control component that determines a location of a perturbation based at least in part on time delays between transmission of the first acoustic wave from the first transducer and receipt of a second acoustic wave at each of the at least second and third transducers, the second acoustic wave is one of reflected and scattered from a location of a perturbation on the substrate surface. -on the substrate surface.
2. (Cancelled)
3. (Cancelled)
4. (Currently amended) The system of claim [[3]] 1, the time delays between transmission of the first acoustic wave and receipt of the second corresponding perturbation-reflected acoustic [waves]] wave at the second and third transducers define respective ellipses.
5. (Original) The system of claim 4, an intersection between the ellipses delineates a perturbation location on the surface of the substrate.
6. (Original) The system of claim 1, the surface of the substrate is at least one of soda-lime glass, borosilicate glass, a crown glass, a barium-containing glass, a strontium-containing glass, a boron-containing glass, a glass laminate capable of supporting acoustic wave propagation, a

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ceramic material, aluminum, an aluminum alloy, a coated aluminum substrate capable of supporting acoustic wave propagation, and a low-acoustic-loss polymer.

7. (Currently amended) The system of claim 1, the plurality of acoustic wave transducers each ~~transduseer~~ comprises at least one piezoelectric element.

8. (Currently amended) The system of claim [[7]] 1, the plurality of transducers comprises a at least first acoustic wave transmitting transducer that converts an electrical signal into an acoustic wave that is propagated across the substrate surface.

9. (Currently amended) The system of claim [[7]] 1, the plurality of transducers comprises at least two second and third receiving transducers that convert an acoustic wave that is propagated across the substrate surface into an electrical signal that can be analyzed by the control component.

10. (Currently amended) The system of claim 9, further comprising ~~a comprising~~ at least one grating associated with each of the at least second and third ~~two~~ receiving transducers and disposed above the piezoelectric element of each receiving transducer.

11. (Currently amended) The system of claim 9, further comprising an amplifier associated with each of the at least second and third receiving ~~transduseer~~ transducers that amplifies the electrical signal produced by the receiving component for analysis by the control component.

12. (Currently amended) A method for determining a location of a perturbation on a substrate surface, comprising:

transmitting an acoustic wave across a substrate surface from one or more transducers coupled to a perimeter of the substrate surface;

detecting the transmitted acoustic wave at two or more points near the perimeter of the substrate surface;

converting the detected acoustic waves into electrical signals;

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analyzing the electrical signals to determine time delays between transmission of the acoustic wave and receipt of the transmitted acoustic wave at each receiving transducer;
~~detecting extant time delays between transmission of the acoustic wave and receipt of the acoustic wave at the at least two points;~~ and
determining a location of perturbation of the substrate surface based at least in part on detected the time delays.

13. (Original) The method of claim 12, further comprising transmitting the acoustic wave at a broad diffraction angle to propagate the wave across the entire substrate surface.

14. (Original) The method of claim 13, further comprising perturbing the substrate surface to deflect the transmitted acoustic wave.

15 -18. (Cancelled)

19. (Currently amended) The method of claim [[18]] 12, further comprising employing gratings in close proximity to each of at least two receiving transducers to direct an incoming acoustic wave longitudinally to each respective receiving transducer.

20. (Currently amended) A system for determining a perturbation location on a substrate surface, comprising:

means for converting an electrical signal into a mechanical signal that stresses the substrate surface;

means for transmitting the mechanical signal as an acoustic wave across a substrate surface from at least one acoustic wave transducer that is coupled to the substrate surface;

means for receiving the transmitted acoustic wave at two or more points near the perimeter of the substrate surface; and

means for determining a location of a perturbation of the substrate surface based at least in part on time delays between transmission and receipt of the acoustic wave.

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21. (Original) The system of claim 20, further comprising means for longitudinally directing a transmitted acoustic wave to the means for receiving the transmitted acoustic wave.

22. (Cancelled)

23. (Original) The system of claim 20, further comprising means for converting a mechanical stress signal to an electrical signal indicative of the mechanical stress signal.